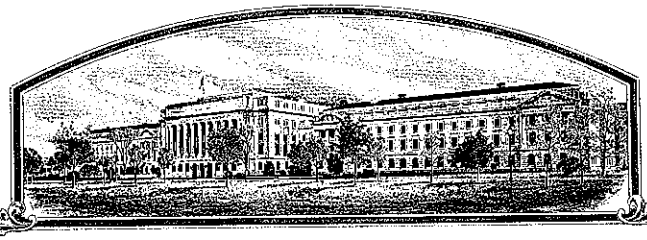
No. 9200114



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup King Co.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'Viking 1'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* November *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Espy

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Northrup King Co.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
90792

3. VARIETY NAME
Viking 1

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
P. O. Box 959
Minneapolis, MN 55440

5. PHONE *(Include area code)*
612-593-7333

FOR OFFICIAL USE ONLY

PVPO NUMBER
9200114

FILING
Date: March 5, 1992
Time: ☐ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $2150.
Date: Mar. 5, 1992
Certificate Fee: $250.00
Date: October 27, 1993

6. GENUS AND SPECIES NAME
Medicago sativa L.

7. FAMILY NAME *(Botanical)*
Leguminosae

8. CROP KIND NAME *(Common Name)*
Alfalfa

9. DATE OF DETERMINATION
November 1989

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Delaware

12. DATE OF INCORPORATION
1976

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Dr. ~~Robert W. Romig~~ Jon F. Fobes
Northrup King Co.
P. O. Box 959
Minneapolis, MN 55440

AAA 15Nov1993

FAX(612)593-7218
612-593-7305 86

PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____.
g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____.)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," give names of countries and dates) U.S. January 1992
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Robert W. Romig	Vice President Research	March 3, 1992
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
		1

EXHIBIT A

ORIGIN AND BREEDING HISTORY
90792

We developed the alfalfa variety Viking 1 from crossing among selections from the varieties Apollo 2, DK 135, and Surpass.

In the case of Apollo 2 and DK 135 sources, we developed progeny through 3 cycles of selection. In the first cycle, we selected for resistance to phytophthora root rot (Phytophthora megasperma f. medicaginis), in the second cycle for resistance to anthracnose (Colletotrichum trifolii) and in the third cycle, again for resistance to phytophthora root rot. In each of the first two cycles, we intercrossed at random among the selected plants, but only among plants derived from the same varietal source. In the third cycle, we intercrossed plants from one source with those from the other. We then selected the progeny from these crosses for resistance to verticillium wilt (Verticillium alboatrum), fusarium wilt (Fusarium oxysporum f. medicaginis), and bacterial wilt (Corynebacterium insidiosum). We harvested and bulked seed from about 50 plants at this stage.

In the case of Surpass, we intercrossed among the plants that survived one cycle of selection sequentially for all of the following diseases: Aphanomyces root rot (Aphanomyces euteiches), anthracnose, phytophthora root rot, verticillium wilt, fusarium wilt, and bacterial wilt. We harvested and bulked seed from about 50 plants here also.

We mixed together one gram of seed from each of these two new breeding lines and planted the mixture in a cage isolation at Woodland, CA for intercrossing by bees to provide breeder seed (Syn 1), in 1987.

We subsequently grew foundation seed (Syn 2) in isolation in Woodland, CA in 1990, and the foundation seed (Syn 3) in isolation at Touchet, WA in 1991. We expect to sell certified seed (Syn 4) of the variety in 1992.

The variety Viking 1 is stable and uniform. During the three generations of increase and four years of testing, no off-types or variants have been observed. We will maintain the variety by increases from reserve breeders or foundation seed.

EXHIBIT B

NOVELTY STATEMENT

Viking 1 most closely resembles the variety Cutter. Viking 1 differs from Cutter in Verticillium wilt resistance, being 66% resistant, or highly resistant when Vertus is adjusted to 40% resistant plants and Saranac is 4% resistant. Cutter is described as resistant which would fall between 31-50% resistant plants.

FORM APPROVED: OMB NO. 0581-005E

EXHIBIT C (Alfalfa)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
ALFALFA *(Medicago sativa* sensu Gunn et al.*)*

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Northrup King Company	90792	

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*

P.O. Box 959
Minneapolis, MN 55440

FOR OFFICIAL USE ONLY

PVPO NUMBER 9200114

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commerical generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g., [0][8][9]) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart, e.g., The Munsell Plant Tissue Color Charts.

1. WINTERHARDINESS:

[8] CLASS:

1 = Very Non-Winterhardy (CUF 101)
2 = Non-Winterhardy (Moapa 69)
3 = Intermediately Non-Winterhardy (Mesilla)
4 = Semi-Winterhardy (Lahontan)
5 = (Du Puits)
6 = Moderately Winterhardy (Saranac)
7 = (Ranger)
8 = Winterhardy (Vernal)
9 = Extremely Winterhardy (Norseman)

TEST LOCATION: Stanton, MN

2. FALL DORMANCY:

FALL DORMANCY (DETERMINED FROM SPACED PLANTINGS)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				Vernal			
U of MN - Rosemount	9-7-90	10-12-90	7.4	7.8	6.8	6.5	.7

* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: Space planted replicated trials - height converted to AS1

[7] Fall Growth Habit (Determined from Fall Dormancy Trials)

1 = Erect (CUF 101)
3 = Semierect (Mesilla)
5 = Intermediate (Saranac)
7 = Semidecumbent (Vernal)
9 = Decumbent (Norseman)

3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

[4]

1 = Very Fast (CUF 101)
3 = Fast (Saranac)
5 = Intermediate (Ranger)
7 = Slow (Vernal)
9 = Very Slow (Norseman)

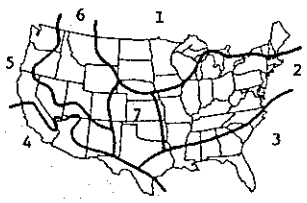
TEST LOCATION: Stanton, MN

4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

[ ] Primary Area of Adaptation

5, 7, [2] [6] Other Areas of Adaptation

1 = North Central
2 = East Central
3 = Southeast
4 = Southwest
5 = Moderately Winterhardy Intermountain
6 = Winterhardy Intermountain
7 = Great Plains
8 = Other *(Specify)* _____



5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

[ ][ ] Days Earlier Than . . . . . [ ]
Same As . . . . . [ ]
[ ][ ] Days Later Than . . . . . [ ]

1 = CUF 101
2 = Mesilla
3 = Saranac
4 = Vernal
5 = Norseman

TEST LOCATION: _____

6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leafhoppers if necessary):

[2] 1 = Very Dark Green (524) 2 = Dark Green (Vernal) 3 = Light Green (Ranger) 9200114

COLOR CHART VALUE (Specify chart used: _____):

APPLICATION VARIETY: _____

VERNAL: _____

TEST LOCATION: _____

7. CROWN TYPE (Determined from spaced plantings):

[2] Noncreeping Types: 1 = Broad (Vernal) 2 = Intermediate (Saranac) 3 = Narrow (CUF 101)

Creeping Types: 4 = Creeping Rooted (Rangelander) 5 = Rhizomatous (Rhizoma)

8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agricultural Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

[88] % Purple and Violet (Subclasses 1.1 to 1.4)

[8] % Blue (Subclasses 2.3 and 2.4)

[4] % Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)

[0] % Yellow (Subclasses 4.1 to 4.4)

[0] % Cream (Class 3)

[0] % White (Class 5)

TEST LOCATION: Stanton, MN

9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

[ ] % Tightly Coiled (One or more coils, center more or less closed)

[ ] % Loosely Coiled (One or more coils, center conspicuously open)

[ ] % Sickle (Less than 1 coil)

TEST LOCATION: _____

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D.
Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE: DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 *(Colletotrichum trifolii)*	Application	1	44	150			Northrup King Co. Stanton, MN 1987 Laboratory
	Arc (R)						
	Saranac AA (R)		45	150			
	Saranac (S)		4	150		LSD.05 for % = 5	
	SCORING SYSTEM: Percent resistance based on seedling survival. Adjusted to check						
Anthracnose, Race 2 *(Collectotrichum trifolii)*	Application	NA					
	Saranac AR (R)						
	Arc (S)						
	SCORING SYSTEM:						
Bacterial Wilt *(Corynebacterium insidiosum)*	Application	1	63	200	2.4	.7	1988 Northrup King Co. Stanton, MN field
	Vernal (R)		42	200	2.8		
	Narragansett (S)		2	200	4.3		
	SCORING SYSTEM: 0-5 with 0 and 1 considered resistant,. Adjusted data						
Common Leafspot *(Pseudopeziza medicaginis)*	Application	NA					
	MSA-CW3AN3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						

10. A. PEST RESISTANCE (Continued):

DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew *(Peronospora trifoliorum)*	Application NA						
Isolate, if known:	Saranac (R)						
	Kanza (S)						
	SCORING SYSTEM:						
Fusarium Wilt *(Fusarium oxysporum f. medicaginis)*	Application	2	60	150	1.9		Univ. of MN 1990 Rosemount, MN Field
	~~Moapa 69 (R)~~ Agate		54	150	2.5		
	~~Narragansett (R)~~ MN GN-1		5	150	4.6	.6	
	SCORING SYSTEM: Scored 0-5 with 0 and 1 considered resistant. Data adjusted						
Phytophthora Root Rot *(Phytophthora megasperma f. medicaginis)*	Application	1	49	100	3.8		1988 Northrup King Stanton, MN Field
	Agate (R)		43	100	3.8		
	Saranac (S)		6	100	3.1	.8	
	SCORING SYSTEM: Scored 1-6 with 1 and 2 considered resistant. Data adjusted.						
Verticillium Wilt *(Verticillium alboatrum)*	Application	1	66	144		LSD.05 on % =	1990 Northrup King Stanton, MN Laboratory
	Vertus (R)		40	144			
	Saranac (S)		4	144		14.0	
	SCORING SYSTEM: Scored 1-5 with 1 and 2 considered resistant. Data adjusted.						
Other *(Specify)* Aphanomyces	Application	2	3	100		LSD.05 on % =	1990 Northrup King Stanton, MN Laboratory
	(R)		40	144			
	(S)		4	144		14.0	
	SCORING SYSTEM: Scored 1-5 with 1 and 2 considered resistant. Data adjusted.						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

B. INSECT RESISTANCE:

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil *(Hypera postica)*	Application	NA					
	Arc (R)			100			
	Saranac (S)						
	SCORING SYSTEM:						

10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Blue Alfalfa Aphid *(Acyrthosiphon kondoi)*	Application	2	28	150	3.2		1991 Northrup King Co. Stanton, MN Laboratory
	CUF 101 (R)		55	150	1.9		
	PA-1 (S)		0	150	5.0	.6	
	SCORING SYSTEM: Scored 1-5 with 1,2, and 3 considered resistant. Adjusted to check.						
Pea Aphid *(Acyrthosiphon pisum)*	Application	2	29	150	3.9		1991 Northrup King Co. Stanton, MN Laboratory
	XXXXX Baker		45	150	3.7		
	XXXXX Vernal		3	150	4.4	.4	
	SCORING SYSTEM: Scored 1-5 with 1,2, and 3 considered resistant. Adjusted to check.						
Spotted Alfalfa Aphid *(Therioaphis maculata)* *Biotype, if known:*	Application	2	18	150	3.6		1991 Northrup King Co. Stanton, MN Laboratory
	XXXXXX CUF 101		57	150	2.5		
	XXXXXX Vernal		1	150	4.8	.4	
	SCORING SYSTEM: Scored 1-5 with 1,2, and 3 considered resistant. Adjusted to check.						

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Potato Leafhopper Yellowing *(Empoasca fabae)*	Application NA						
	MSA-CW3An3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

C. NEMATODE RESISTANCE:

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Northern Root Knot *(Meloidogyne hapla)*	Application NA						
	Nev. Syn. XX (R)						
	Lahontan (S)						
	SCORING SYSTEM:						

10. C. NEMATODE RESISTANCE (Continued):

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot *(Meloidogyne incognita)*	Application						
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode *(Ditylenchus dipsaci)*	Application	2	43	150	2.9		1991 Northrup King Co. Stanton, MN Laboratory
	~~Lahontan (R)~~ XXXXXXXX Vernema		65	150	2,3		
	Ranger (S)		19	150	3.3	.5	
	SCORING SYSTEM:						
Other *(Specify)*	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness	Vernal/Clipper	Plant Color	
Recovery After 1st Cut		Crown Type	Saranac
Area of Adaptation	Legend	Combined Disease Resistance	Clipper
Flowering Date		Combined Insect Resistance	MultiKing 1

REFERENCES

Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)

Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).

Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of Medicago sativa L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.

Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

EXHIBIT 3

STATEMENT OF THE BASIS OF OWNERSHIP

The alfalfa cultivar Viking 1 was developed by Northrup King Co. alfalfa breeding staff from germplasm sources cited in Exhibit A of the application. Northrup King believes that Viking 1 is novel as defined in the Plant Variety Protection Act, and therefore that Northrup King is the sole owner of Viking 1.

State of Delaware

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "NORTHRUP KING CO.", CHANGING ITS NAME FROM "NORTHRUP KING CO." TO "NOVARTIS SEEDS, INC.", FILED IN THIS OFFICE ON THE THIRTIETH DAY OF DECEMBER, A.D. 1996, AT 9 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.

GREAT SEAL OF THE STATE OF DELAWARE • 1793 • 1847 • 1907 •

LIBERTY AND INDEPENDENCE

Edward J. Freel

Edward J. Freel, Secretary of State

0829320 8100

960389892

AUTHENTICATION: 8267947

DATE: 12-31-96

CERTIFICATE OF AMENDMENT OF CERTIFICATE OF INCORPORATION

OF

NORTHRUP KING CO.

It is certified that:

1. The name of the corporation (hereinafter called the "Corporation") is Northrup King Co.

2. The Certificate of Incorporation of the Corporation is hereby amended by striking out Section 1 thereof and by substituting in lieu of said Section the following new Section.

1. The name of the Corporation is Novartis Seeds, Inc.

3. The amendment of the certificate of incorporation herein certified has been duly adopted and written consent has been given in accordance with the provisions of Sections 228 and 242 of the General Corporation Law of the State of Delaware.

4. The effective date of the amendment herein certified shall be January 1,1997.

Signed on December 27, 1996.

Edward C. Resler
Vice President & Secretary